

### REMARKS

Claims 1, 4-16 and 33-41 are pending in the present application. Claims 38-41 are amended. The amendments to claims 38-41 are supported by the specification at page 10, lines 13-17.

It is respectfully submitted that the present amendment presents no new issues or new matter and places this case in condition for allowance. Reconsideration of the application in view of the above amendments and the following remarks is requested.

#### I. The Rejection of Claims 1, 4-16 and 33-41 under 35 U.S.C. 112

Claims 1, 4-16 and 33-41 are rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the enablement requirement. The Office states that the phrase "the particulate component having a mean size of more than 40  $\mu\text{m}$  in the longest dimension" lacks support in the specification and is allegedly not equivalent to the previous phrase used in the claims, namely, that "the particles of the particulate component have a mean size of more than 40  $\mu\text{m}$  in the longest dimension."

Applicants respectfully point out that the language for the previous amendment is taken virtually verbatim from the specification at page 9 and page 22. Applicants have reproduced the following sections of the specification for the convenience of the Office.

The mean particle size of the particulate component is as said, *supra*, at least 40  $\mu\text{m}$ , more preferred at least 60  $\mu\text{m}$  such as at least 80  $\mu\text{m}$ , e.g. at least 100  $\mu\text{m}$ . Some useful particulate components may be even larger e.g. have a mean particle size of at least 140  $\mu\text{m}$  or even at least 200  $\mu\text{m}$ . Depending on the desired upper size limit of the finished granule the particulate component may have any mean size of more than 40  $\mu\text{m}$  as long as it is smaller than the desired mean size of the finished mixer granule.

See the specification at page 9, lines 21-29.

Accordingly the invention encompasses a process for the manufacture of an enzyme containing mixer granule comprising the steps of:

- a) adding less than 75 of 100 parts of a particulate component having an mean size of more than 40  $\mu\text{m}$  in its longest dimension to more than 25 of 100 parts of an enzyme and conventional granulating components and mixing these ingredients to form an enzyme containing granule,
- b) drying the granules and
- c) optionally coating the granules

See the specification at page 22, lines 1-10.

The term "particulate component" also refers to a composition that comprises more than

one particle. This is clear from the specification, including page 9, lines 5-20 and page 10, lines 6-17. In this regard, it is not a correct assertion that the phrase "the particles of the particulate component have a mean size of more than 40  $\mu\text{m}$  in their longest dimension" is not equivalent to the phrase "particulate component having a mean size of more than 40  $\mu\text{m}$  in the longest dimension." Applicants previously amended the claim language simply as a matter of word choice to remove redundancy, and using language taken verbatim from the specification. As is clear from the above cited sections; the amendment did not change the scope of the claim.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

## **II. The Rejection of Claims 38-41 under 35 U.S.C. 112**

Claims 38-41 are rejected under 35 U.S.C. 112, first paragraph, as allegedly lacking written description support. The Office states that the claims recite a SPAN value for the finished granule, which is not supported by the specification, because a single granule cannot have a SPAN value, according to the definition provided in the specification for SPAN value.

Claims 38-41 have been amended to clarify that it is the particulate component of the finished granule that has the recited SPAN value.

For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 112. Applicants respectfully request reconsideration and withdrawal of the rejection.

## **III. The Rejection of Claims 1, 4-16 and 33-41 under 35 U.S.C. 102**

Claims 1, 4-16 and 33-41 are rejected under 35 U.S.C. 102 as being anticipated by Herrman et al. The Office contends that Applicants' arguments filed on April 14, 2003 are not persuasive. This rejection is respectfully traversed.

The present invention is directed to a mixer granulation process in which a particulate component having a mean size of more than 40  $\mu\text{m}$  in the longest dimension is added in an amount of less than 75 of 100 parts by weight to more than 25 of 100 parts by weight of an enzyme or an enzyme and granulating agent, and these ingredients are then mixed in a mixer granulation process to form a granule. By employing these specific process steps/conditions, an artisan will have better control over the size of finished mixer granule, which accordingly reduces the requirement for further processing of the granules, such as, by sieving and/or recirculation of odd-sized granules. In addition, the claimed invention provides for the manufacture of granules having a lower mean size than may be achieved by conventional mixer

granulation process s.

Applicants previously pointed out that Herrman et al. does not teach a process for making an enzyme containing granule in a mixer granulation process which includes the step of "adding less than 75 of 100 parts by weight of a particulate component having a mean size of more than 40  $\mu$ m in the longest dimension to more than 25 of 100 parts by weight of an enzyme or enzyme and granulating agent." Applicants specifically quoted Herrman et al., which teaches that the particulate component (organic flour) is added in the process in an amount of 75 to 99.9 parts by weight and the enzyme or enzyme mixture is added in an amount of 0.1 to 25 parts by weight. See Herrman et al. page 3, lines 1-9, lines 29-31, page 4, lines 1-6, claim 1, which was consistent with the Office's summary of Herrman et al. in Paper No. 8.

The Office has responded by stating that Applicants have allegedly provided only a selected statement from Herrman et al. and other sections of Herrman allegedly read on the claimed invention. In particular, the Office alleges that:

Experiment 2.2 (pg. 24) [of Herrman et al.] provides the vehicle material (soy fine flour) in an amount of 7.0 kg, and the enzyme component in an amount of 4.27 kg. These amounts equate to approximately 62% for the vehicle material (i.e., the particulate component), and 38% for the enzyme component. The other examples provide similar amounts, such as 61% vehicle component to 39% enzyme (page 26), and 71% vehicle to 29% enzyme (pg. 28). Thus, the teachings of the reference are clearly not limited to the selected statement provided by applicants, and in fact, read directly upon the instant claimed limitations.

Foremost, the teaching of Herrman et al. to add the particulate component in an amount of 75 to 99.9 parts by weight and the enzyme or enzyme mixture in an amount of 0.1 to 25 parts by weight appears repeatedly throughout the specification and original claims, as discussed in the prior response. Applicants have not provided merely a selected incomplete statement from Herrman et al., but have accurately recited the teaching of Herrman et al.

Indeed, the sections of Herrman et al. which the Office now references do not negate this teaching, but actually reinforce Herrman et al. teaching that the vehicle should be between 75 to 99.9 parts by weight. The Office provides calculations which it states allegedly show that Herrman et al. reads on the claimed invention, however, the Office's calculation of the enzyme amount fails to consider that the amounts given are for the liquid carrier containing the enzyme not for the enzyme, and the Office has not factored in the dry substance content of the enzyme. When the appropriate calculation is made, that is, the actual enzyme content (appropriately measured by its dry substance content) is factored into the calculation, the amounts of the enzyme equates to approximately 1.69 kg for Experiment 2.2 (page 24), 1.60 kg for Experiment

2.3 (page 26) and 1.25 kg for Experiment 2.5 (page 28), not the much higher amounts relied upon by the Office. These results, not surprisingly, are consistent with the explicit teaching of Herrman et al, as previously discussed, that the enzyme is added in 0.1 to 25 parts by weight enzyme or enzyme mixture calculated as dry substance content of the enzyme and the particulate component (i.e. the vehicle) is added in 75 to 99.9 parts by weight (including moisture) of the organic flour. See Herrman et al. at page 3, lines 4-6.

Thus, Herrmann et al. does not teach the claimed process as Herrman et al. teaches the addition of a different ratio of particulate component to enzyme/granulating agent then is recited in the claims of the present invention, as further evidenced by the sections of Herrman et al. now referenced by the Office.

The Office's additional statements that the "intent of Herrman et al." is to provide for an enzyme granule that is within the limitations of the claimed invention is also not correct. The statement at the bottom of page 14 of Herrman et al., which is cited by the Office in support of this allegation, does not provide any guidance such that an artisan would disregard the teachings of Herrman et al. to use a certain ratio of particulate component to enzyme nor do they show an intent of Herrman et al. other than what Herrman et al. discloses. Indeed, the reference on the bottom of page 14 that the enzyme can be 0.08 to 26.4 wt % (dry substance) enzyme or enzyme mixture, is specifically referring to the enzyme in the core, not to the amount of enzyme content in the composition as a whole. The complete quote from Herrman et al. makes this point clear:

Such enzyme granulates in accordance with with [sic] the invention are especially further characterized by the fact that they consist of a granulate core with the composition 0.08 to 26.4 wt % (dry substance) enzyme or enzyme mixture, 96.92 to 43.8 wt % (dry substance without moisture) of a flour type with a degree of grinding of 30 to 100%, where the flour type was obtained by grinding of a flour source that was optionally washed and/or purified beforehand, and that was treated with dry superheated steam, optionally up to a total maximum of 17.8% customary granulation or formulation agents (calculated as water free substance), and 3 to 12 wt % moisture, where the sum of the constituents of the granulate core (thus the enzyme or enzyme mixture, flour-dry substance, water and optionally granulation and formulation auxiliary agents) amounts to 100 wt %, and optionally from one or more protective layers encasing the granulate core.

Notwithstanding the above, Herrman also does not teach the use of a particulate component having a mean size of more than 40 µm. The Office asserts that a mean particle size of more than 40 µm was known in the art. However, the Office is reminded that it is asserting a rejection under 35 U.S.C. 102(b), which requires that each and every element be disclosed in a

single reference. In this regard, Applicants point was that even if it was known in the art to use a mean particle of size of greater than 40  $\mu\text{m}$ , the Offices' asserted anticipatory reference, Herrman et al., does not teach an artisan to employ particulate components having the mean size recited by the claims in a mixer granulation process. If the Office is asserting that an artisan would be motivated to employ such a mean particle size, the Office should point out where such teaching is found and where is the motivation to combine that teaching with Herrman et al.

Thus, the Office has not established a proper 102 rejection, or even a proper 103 rejection, as Herrman et al. does not teach a mixer granulation process involving "adding less than 75 of 100 parts by weight of a particulate component having a mean size of more than 40  $\mu\text{m}$  in the longest dimension to more than 25 of 100 parts by weight of an enzyme or an enzyme and granulating agent."

Regarding dependent claims 33-36 and 38-41, the Office asserts that the SPAN value of these claims is an advantage that would allegedly inherently exist and flow naturally from the Herrman et al. process. The Office, however, has not provided any support to show that Herrman et al. inherently teaches a particulate component that have a SPAN value of less than 2.5 or that the particulate component of the finished granule would have a SPAN value of less than 2.5. Moreover, the closest Herrman et al. comes to even recognizing anything at all related to the importance of a SPAN value is found in example 2, where Herrman et al. provide two values, undersized and oversized particles. However, there is no basis to assert that the Herrman et al. inherently result in particles of the finished product having a SPAN value of less than 2.5 (Claims 38-41) or employing a particulate component having a SPAN value of less than 2.5 (Claims 33-36).


For the foregoing reasons, Applicants submit that the claims overcome this rejection under 35 U.S.C. 102. Applicants respectfully request reconsideration and withdrawal of the rejection.

**VII. Conclusion**

In view of the above, it is respectfully submitted that all claims are in condition for allowance. Early action to that end is respectfully requested. The Examiner is hereby invited to contact the undersigned by telephone if there are any questions concerning this amendment or application.

Respectfully submitted,

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Jason I. Garbell, Reg. No. 44,116  
Novozymes North America, Inc.  
500 Fifth Avenue, Suite 1600  
New York, NY 10110  
(212)840-0097